

AMENDMENTS TO THE SPECIFICATION

Please remove the page entitled "TABLE OF CONTENTS" from the present specification.

At page 11 of the present specification, immediately underneath the heading "BRIEF DESCRIPTION OF THE FIGURES", please insert the following paragraph, pursuant to 37 C.F.R. § 1.84(a)(2)(iii):

-- The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee. --

At pages 11 through 12, please replace the paragraph starting with "Figure 4" with the following paragraph:

-- **Figure 4** shows the quantification of BMP2 protein in the conditioned medium by ELISA enzyme-linked immunosorbent assay (ELISA). On day 6 after infection of C2C12 cells with AAV-BMP2 or AAV-EGFP at an MOI (viral particles/cell) of 10^6 , the amount of BMP2 protein in the conditioned medium was measured by ELISA. Values represent mean \pm S.D. (n=3) and were statistically significantly different from the control (asterisk denotes $p < 0.001$) as determined by two-tailed Student's test. --

At page 12, please replace the paragraph starting with "Figures 7A and 7F" with the following paragraph:

-- **~~Figures 7A and 7F~~ 7A-7F** show radiographic analysis of new bone formation in immunocompetent ~~[[SD]]~~ Sprague-Dawley (SD) rats. Significant bone formation could be detected by X-ray film in animals injected with AAV-BMP2. No bone was formed in those rats receiving AAV-EGFP or empty AAV. Fig. 7A: 3 weeks post-injection of high-titer AAV-BMP2 (10^{12} VP); Fig. 7B: 8 weeks post-injection of high-titer AAV-BMP2 (10^{12} VP); Fig. 7C: 3 weeks post-injection of high-titer AAV-BMP2 (10^{12} VP); Fig. 7D: 8 weeks post-injection of high-titer AAV-BMP2 (10^{12} VP); Fig. 7E: 8 weeks

post-injection of low-titer AAV-BMP2 (5×10^{11} VP); Fig. 7F: 8 weeks post-injection of AAV-EGFP (10^{12} VP). Arrows indicate the regional newly formed bone tissue. --

At pages 12 through 13, please replace the paragraph starting with "Figures 8A-8F" with the following paragraph:

-- **Figures [[8A-8E]] 8A-8F** show ~~Histological~~ histological analysis of *in vivo* bone formation. At 1 week post-injection, there was a significant accumulation of chondrocytes (arrow) with an expanding extracellular cartilaginous matrix within skeletal muscle (M), with mesenchymal cells (arrowhead) surrounding the cartilaginous mass (Fig. 8A: x10 magnification; Fig. 8B: x20 magnification). At 3 weeks post-injection, a well-defined ~~ossification~~ ossification tissue within skeletal muscle (M) was formed, with an obvious cortical rim with trabecular structure (T), medullary cavity containing bone marrow and adipocytes-like cells (+), osteocytes (arrow), osteoblasts (solid arrowhead), multinucleated osteoclasts (open arrowhead), and fatty degeneration (asterisk) in adjacent muscle tissue (Fig. 8C: x10 magnification; Fig. 8D: x20 magnification). At 8 weeks post-injection, more mature bone was noticed, with highly ordered lamellar structure, enlarged medullary cavity containing more adipocyte-like cells (+), more osteocytes (arrow), and fatty degeneration (asterisk) in adjacent muscle tissue (Fig. 8E: x10 magnification; Fig. 8F: x20 magnification). --

At page 13, please replace the paragraph starting with "Figures 10A-10C" with the following paragraph:

-- **Figures 10A-10C** show a radiographic analysis for new bone formation. At eight weeks post-injection, rats were taken X-ray films for evidence of bone induction. Note that the bone mass in animals injected with both AAV-BMP2 (5×10^{11} VP) and Ad-BMP2 (5×10^8 VP) displayed a significant increase in bone forming area and intensity, comparing to that obtained in rats treated with AAV-BMP2 (5×10^{11} VP) alone. No radiographic ossification was detected in the rats receiving AAV-EGFP (5×10^{11} VP). Fig. 10A: 8 weeks post-injection of AAV-BMP2 (5×10^{11} VP) plus Ad-BMP2 (5×10^8

VP); Fig. 10B: 8 weeks post-injection of AAV-BMP2 (5×10^{11} VP) alone; Fig. 10C: 8 weeks post-injection of AAV-EGFP (5×10^{11} VP). Arrows indicate the regional newly formed bone tissue. --

At page 13, please replace the paragraph starting with "Figure 11" with the following paragraph:

-- **Figure 11** shows morphometric analysis for radiographic bone forming area. At eight weeks post-injection, the relative bone forming area on X-ray films were measured using imageQuant software. Values represent mean \pm S.D. and were significantly different between ~~AAV alone~~ AAV-BMP2 alone (5×10^{11} VP) and ~~AAV + Ad~~ AAV-BMP2 (5×10^{11} VP) + Ad-BMP2 (5×10^8 VP) ($p < 0.001$), as determined by two-tailed Student's test.[[.]] --

At pages 13 through 14, please replace the paragraph starting with "Figure 12" with the following paragraph:

-- **Figure 12** shows morphometric analysis for radiographic bone forming intensity. At eight weeks post-injection, the relative bone forming intensity on X-ray films were measured using ImageQuant software. Values represent mean \pm S.D. and were significantly different between ~~AAV alone~~ AAV-BMP2 alone (5×10^{11} VP) and ~~AAV + Ad~~ AAV-BMP2 (5×10^{11} VP) + Ad-BMP2 (5×10^8 VP) ($p < 0.001$), as determined by two-tailed Student's test. --